Name:

## at1113exam: Expand, factor, and solve quadratics (v208)

1. Expand the following expression into standard form.

$$(9x + 8)^2$$

$81x^2 + 72x + 72x + 64$

$81x^2 + 144x + 64$

2. Expand the following expression into standard form.

$$(8x - 9)(8x + 9)$$

$64x^2 + 72x - 72x - 81$

$64x^2 - 81$

3. Expand the following expression into standard form.

$$(3x - 5)(9x - 8)$$

$27x^2 - 24x - 45x + 40$

$27x^2 - 69x + 40$

4. Solve the equation.

$$(9x - 5)(4x + 7) = 0$$

$x = \frac{5}{9}$ $\quad$ $x = \frac{-7}{4}$

5. Factor the expression.

$$x^2 + 4x - 32$$

$$(x - 4)(x + 8)$$

6. Factor the expression.

$$16x^2 - 49$$

$$(4x + 7)(4x - 7)$$

7. Solve the equation with factoring by grouping.

$$8x^2 + 20x - 6x - 15 \;=\; 0$$

$$(4x - 3)(2x + 5) = 0$$

$$x = \frac{3}{4} \qquad x = \frac{-5}{2}$$

8. Solve the equation.

$$6x^2 + 28x - 14 \;=\; 3x^2 + 2x - 5$$

$$3x^2 + 26x - 9 = 0$$

$$(3x - 1)(x + 9) = 0$$

$$x = \frac{1}{3} \qquad x = -9$$